NEWSLINE

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In the eye of the storm

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WHAT'S **INSIDE**

LAB ANNOUNCEMENTS

LANL, LLNL add strength to annual assessment process

A new era in collaboration between Lawrence Livermore and Los Alamos kicked off last week when the directors of both labs met to jointly review the status of the nuclear stockpile.

The meeting marked the first time the directors together conducted a joint review of the stockpile.

"It was a very productive session," summed up LLNL Director George Miller. "Each of us got to gain a more detailed insight into the status of the other lab's systems, as well as gain additional perspectives into our own."

"We were able to go over a full spectrum of issues in a very direct way," added Michael Anastasio, director of Los Alamos. "I found it very valuable."

Each year the directors of LLNL and LANL are required to write a letter detailing their assessment of the safety and security of the nuclear weapons stockpile - often called annual certification. The process began in the mid-1990s, after the country stopped performing nuclear tests and the Department of Energy launched the Stockpile Stewardship Program. The directors' reports, coupled with an assessment from the commander of STRATCOM, are then sent off to the secretaries of Energy and Defense, who in turn provide their own report to the president.

In previous years the labs exchanged reports for cross assessment conducted thousands of miles apart. But this year, at the request of Anastasio and Miller, a joint session was called. Anastasio and several other managers from LANL visited LLNL last week to conduct the day-long review.

"This was something I specifically included in the LANS, LLC proposal for the LANL contract," Anastasio said. "We already have good collaboration, but by getting together, where we can ask questions and spend time discussing the issues, we are better informed and better positioned to address the issues. Each of us can now speak about the entire stockpile, not just what each of our labs is responsible for.

"Through this effort we are moving in a direction both George and I have wanted for some time — approaching the stockpile from a national perspective rather than just our separate responsibilities."

Miller said the joint assessment will enable each lab to increase collaboration on myriad stewardship issues. "We can learn about issues and capabilities at each lab and find ways to help each other," Miller said. "It's an extraordinary valuable addition to an important annual assessment process."

JACQUELINE MCBRIDE/NEWSLINE

From left to right: Mike Dunning, LLNL B Division; Charles McMillan, Los Alamos National Laboratory (LANL); Charles Verdon, LLNL AX Division; Director George Miller; Los Alamos Director Michael Anastasio; Glenn Mara, LANL; Derek Wapman, LLNL W Program; and Brett Knapp, LANL, discuss stockpile stewardship issues during a meeting last week.

Anastasio and Miller also expect the joint session to move the labs toward increased collaboration in areas not necessarily related to stewardship. "Both labs are facing big challenges," Anastasio said. "Each of us can benefit from each other."

Miller and Anastasio agreed that "this meeting is the model for where we would like to see our labs go. We each have our independent responsibilities, and we will preserve them. But by getting together, we draw on each other's capabilities. It's the right thing to do for the labs and the right thing to do for the nation. That's our motivation."

Cherry Murray elected to serve in APS leadership roles

Cherry Murray, the Laboratory's deputy director for Science and Technology, has been elected vice president of the American Physical Society (APS) for 2007. The assignment begins January 1, 2007, and will last four years.

Following her year as vice president, she will successively become president elect, president and then immediate past president. Throughout the four years Murray will be a member of the council and executive board, and will chair both bodies while serving as president.

"I'm extremely honored to take on this role," said Murray. "APS is a world-renowned advocate not only for physics but all of science. I look forward to serving not only APS, but representing this prestigious group in the international physics community."

"I cannot think of a better candidate to take on this important role," said Director George Miller. "As vice president and president, Cherry will provide exceptional leadership to the APS and the broader scientific community. As has been noted by several recent studies, now is a critical time for the future of American science and competitiveness. Cherry and the APS will be important players in resolving the issues facing the future of science in this country."

APS has long been considered one of the most noteworthy scientific societies in the nation. Founded in 1899 out of Cornell, its mission is to "advance and diffuse the knowledge of physics." Today membership consists of more than 40,000 members. APS publishes Physical Review and Physics Today, among other publications. APS is active in public and governmental affairs, and in the international physics community. Last year APS led U.S. participation in the World Year of Physics, a 100-year celebration of Albert Einstein and some of his most important theories.

APS also monitors the human rights of scientists around the globe, and recognizes professional accomplishment with a spectrum of prizes, awards and the election of APS Fellows

Cherry Murray

As vice president, Murray will serve on APS' Panel of Public Affairs and chair the Fellowship Committee, including the Congressional Fellow Selection Committee. As president, she will speak for the APS in a variety of forums, award APS prizes and represent APS on the Council of Scientific Society Presidents.

Murray joined the Lab in 2004, where she is the senior executive responsible for overseeing the quality of science and technology in the Laboratory's programs and disciplines.

Prior to joining the Lab, she worked at Bell Labs, Lucent Technologies, where she served as senior vice president for Physical Sciences and Wireless Research. Murray is nationally recognized for her work in surface physics, light scattering and complex fluids. She is a member of the National Academy of Science, the National Academy of Engineering, and the American Academy of Arts and Sciences. In 2002, Discover Magazine named her as one of the "50 Most Important Women in Science."

LAB ANNOUNCEMENTS

Annual salary review process will run through November

The salary review process is now underway and is scheduled to continue through November. Employees will receive their salary notification from their supervisor between Nov. 16 and 22.

Biweekly paid employees will see increases reflected in their paychecks on Nov. 22.

Monthly paid employees (with the exception of those with salaries at the UC-DOE approval level) will see increases in their Dec. 1 paychecks.

As in prior years, the Compensation Increase Plan (CIP) proposal submitted to the University of California and the Department of Energy was based on a comparison of the Laboratory's average salaries to market averages for similar jobs as reported in market surveys.

Both UC and DOE review the Laboratory's CIP request. Final approval comes from DOE.

The following table outlines the salary program allocations for FY07:

Compensation will host employee briefing sessions in Bldg. 361, room 1140 on the following dates:

Monday	**Sept. 18**	**12 – 1:30 p.m.**
Tuesday	**Sept. 19**	**4 – 5:30 p.m.**
Wed	**Sept. 20**	**7:30 – 9 p.m.**

More information on the FY07 Salary Program is available on the Compensation Homepage at: http://www-r.llnl.gov/ahrd/cbwp/compensation/annual_salary_program.php (in order to view/download the files you must have Livelink access).

If you have questions regarding how this year's program will be implemented within your directorate, contact your supervisor.

FY07 Salary Program Allocations

Salary Structure	Merit Allocation
Firefighter Chief's (050)	6.26%
Security (050)	4.47%
S&E's (200s)	7.10%
Technical (300s)	2.00%
Administrative Management (MGT.1, MGT.2, ESX.0)	5.54%
Administrative & Specialist 5 (ADS.5)	5.09%
Administrative Services (Axx)	3.66%
Legacy Exempt Admin (101 and 102)	3.66%
Audit (Bxx)	2.00%
Counterintelligence (Kxx)	9.74%
Facilities (Nxx)	3.66%
Financial Services (Cxx)	7.80%
Health & Safety (Pxx)	3.66%
HR & Training (Hxx)	6.10%
Legal (Dxx)	2.77%
Business Systems & Analysis (Exx)	4.74%
Procurement / Material Distribution (Fxx)	5.30%
Publications / Art / Relations (Gxx)	4.56%
Security (Jxx)	9.74%
Administrative (400s)	3.66%
Legacy Non-exempt 100s	3.66%
Technical (500s)	2.00%
Step Structures	
Security (600s Sgt/CAS)	5.81%
Facilities (800s)	3.84%
Firefighters (600s)	2.00%
Battalion Chief, Captain, & Dispatchers (600s)	4.29%
Machinists (900s)	2.00%

All structures will receive a 0.30% promotion allocation. Additionally each directorate will receive an adjustment allocation to address equity issues.

Business Services to replace Extensity with a new travel reimbursement system

Business Services will launch ePay, a new and more versatile Web-based travel reimbursement system, on Oct. 2 as a replacement for Extensity. In addition to travel reimbursements, ePay will automate travel pre-payments to vendors, official reimbursements to employees and vendors for items previously categorized as "petty cash," emergency meals, and other special disbursements.

Extensity will be shut down September 22 prior to the release of ePay at the start of the new fiscal year. Business Services is asking employees and resource managers to approve and clear all remaining and current travel expenses from the old Extensity system by Sept. 21. All travel needs to be approved in Extensity and receipts sent to Travel Services by noon Thursday, September 21 to cost in fiscal year 2006. If expenses are not approved and received by this deadline, travelers may be required to re-enter their expenses in the new ePay system. No expense reporting tool will be available for a six-day transition period to the new system. This will allow Business Services to clear data from Extensity and complete year-end financial reporting.

Business Services will offer training classes to support the release of ePay. The 1.5 hour overview presentations will be held for any interested employees in the Bldg. 453 (TSF) auditorium, called the Armadillo Room (room 1001) at 10 a.m. and 2 p.m. Sept. 26 and 28, and Oct. 2, 4, and 5. More in-depth, hands-on travel expense report training will be offered in the Training Center (Trailer 1870), room D starting at 8:15 a.m. and 1 p.m. Oct. 3, 10, 12 and 18. Each class is 3.5 hours. Pre-enrollment is required for this hands-on training class and may be coordinated by contacting Cynthia Cordial at 3-9615.

Look for additional information in upcoming editions of *Newsline* and *NewsOnLine*.

SCIENCE NEWS

Scientists link hurricane intensity to global warming

By Anne M. Stark
Newsline staff writer

New Laboratory research shows that rising sea surface temperatures (SSTs) in hurricane "breeding grounds" of the Atlantic and Pacific oceans are unlikely to be purely natural in origin. These findings complement earlier work that uncovered compelling scientific evidence of a link between warming SSTs and increases in hurricane intensity.

Previous studies to understand the causes of SST changes have focused on temperature changes averaged over very large ocean areas — such as the entire Atlantic or Pacific basins. The new Lab research specifically targets SST changes in much smaller hurricane formation regions.

Using 22 different computer models of the climate system, atmospheric scientists from the Laboratory and 10 other research centers have shown that the warming of the tropical Atlantic and Pacific oceans over the last century is directly linked to human activities.

For the period 1906-2005, the researchers found an 84 percent chance that external forcing (such as human-caused increases in greenhouse gases, ozone and various aerosol particles) accounts for at least 67 percent of the observed rise in SSTs in the Atlantic and Pacific hurricane formation regions. In both regions, human-caused increases in greenhouse gases were found to be the main driver of the 20th century warming of SSTs.

"We've used virtually all the world's climate models to study the causes of SST changes in hurricane formation regions," said Benjamin Santer of the Lab's Program for Climate Modeling and Intercomparison, and lead author of the paper that appears online in the Sept. 11 issue of the *Proceedings of the National Academy of Sciences*.

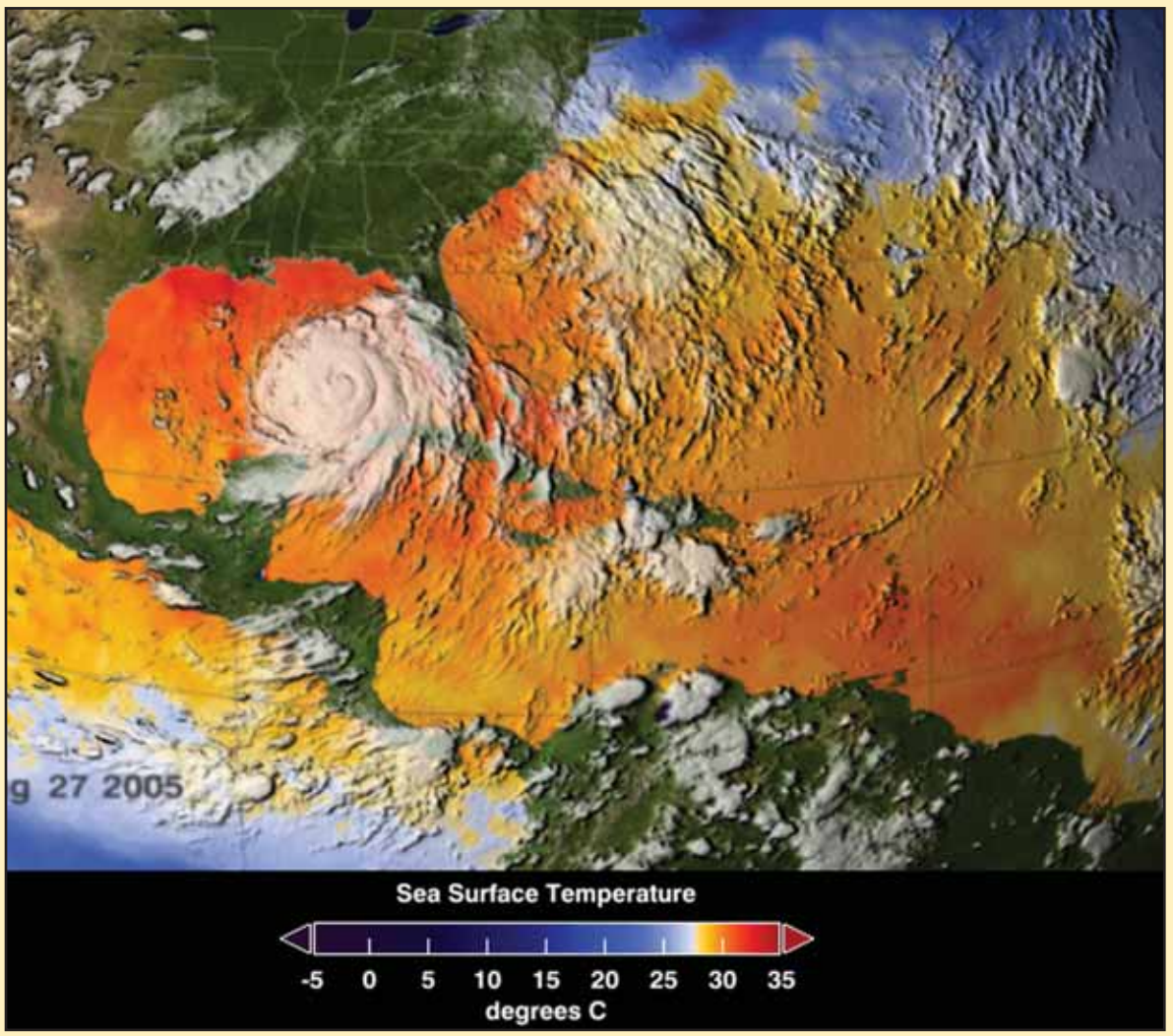
Santer, in conjunction with Livermore colleagues Peter Gleckler, Krishna AchutaRao, Jim Boyle, Mike Fiorino, Steve Klein and Karl Taylor, collaborated with researchers from the National Center for Atmospheric Research, University of California, Merced, Lawrence Berkeley National Laboratory, Scripps Institution of Oceanography, the University of Hamburg in Germany, the Climatic Research Unit and Manchester University in the United Kingdom, the NASA/Goddard Institute for Space Studies and the National Oceanic and Atmospheric Administration's National Climatic Data Center.

"In the real world, we're performing an uncontrolled experiment by burning fossil fuels and releasing greenhouse gases," Santer said. "We don't have a convenient parallel Earth with no human influence on climate. This is why our study relied on computer models for estimates of how the climate of an 'undisturbed Earth' might have evolved. The bottom line is that natural processes alone simply cannot explain the observed SST increases in these hurricane breeding grounds. The best explanation for these changes has to include a large human influence."

Hurricanes are complex phenomena and are influenced by a variety of physical factors such as SST, wind shear, moisture availability and atmospheric stability. The increasing SSTs in the Atlantic and Pacific hurricane formation regions aren't the sole cause of hurricane intensity, but is likely to be one of the most important influences on hurricane strength.

"The models that we've used to understand the causes of SST increases in these hurricane formation regions predict that the oceans are going to get a lot warmer over the 21st century," Santer said. "That causes some concern. In a post-Katrina world, we need to do the best job we possibly can to understand the complex influences on hurricane intensity, and how our actions are changing those influences."

The Livermore portion of the research is funded by the Department of Energy's Office of Biological and Environmental Research.



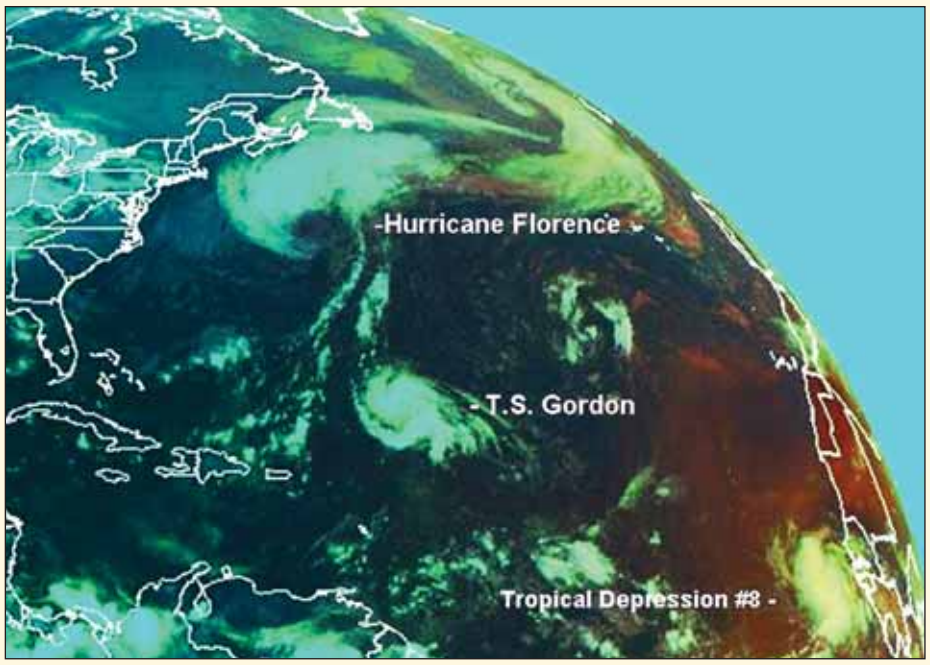
NASA/SVS

Warm ocean waters fuel hurricanes, and there was plenty of warm water for Hurricane Katrina to build up strength once she crossed over Florida and moved into the Gulf of Mexico. This image depicts a three-day average of actual sea surface temperatures (SSTs) for the Caribbean Sea and the Atlantic Ocean, from Aug. 25-27, 2005. Every area in yellow, orange or red represents 82 degrees Fahrenheit or above. A hurricane needs SSTs at 82 degrees or warmer to strengthen. The data came from the Advanced Microwave Scanning Radiometer (AMSR-E) instrument on NASA's Aqua satellite.

As of the morning of Aug. 29, 2005, Hurricane Katrina turned slightly eastward before slamming into shore redirecting the storm's most potent winds and rain away from the low-lying New Orleans area. This satellite image was taken before the storm moved to a Category 5 hurricane. On this day, New Orleans was getting hit with 145 mph winds and a 20-foot storm surge.

CREDIT: NASA/JEFF SCHMALTZ, MODIS LAND RAPID RESPONSE TEAM

SCIENCE NEWS



Storm watch

As the Atlantic hurricane season approaches its peak, which is mid-September, forecasters are watching three storms in the Atlantic Ocean. Hurricane Florence, Tropical Storm Gordon, and the newly formed Tropical Depression #8 can be seen in this satellite image from the National Oceanic and Atmospheric Administration's Geostationary Operational Environmental Satellite (GOES). This image was taken before Gordon was classified as a hurricane.

CREDIT: NOAA/NASA GOES PROJECT

Q&A: The fundamentals of hurricanes and tropical storms

How does a hurricane, typhoon or tropical cyclone form?
A tropical cyclone is a storm system fueled by the heat released when moist air rises and condenses. The name underscores their origin in the tropics and their cyclonic nature. Its circulation is counterclockwise in the northern hemisphere and clockwise in the southern hemisphere.

Depending on their location and strength, there are various terms by which tropical cyclones are known, such as hurricane, typhoon, tropical storm and tropical depression.

Why are hurricanes named?
Tropical cyclones are named to provide ease of communication between forecasters and the general public regarding forecasts, watches, and warnings. Since the storms can often last a week or longer and that more than one can be occurring in the same basin at the same time, names can reduce the confusion about what storm is being described.

What is a tropical disturbance, a tropical depression, or a tropical storm?
These are terms used to describe the progressive levels of organized disturbed weather in the tropics that are of less than hurricane status.

- **Tropical Disturbance**
  A discrete tropical weather system of apparently organized convection — generally 200 to 600 km in diameter — originating in the tropics or subtropics, having a non-frontal migratory character, and maintaining its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field. Disturbances associated with perturbations in the wind field and progressing through the tropics from east to west are also known as easterly waves.
- **Tropical Depression**
  A tropical cyclone in which the maximum sustained wind speed (using the U.S. one-minute average standard) is 33 kt (38 mph, 17 m/s). Depressions have a closed circulation.
- **Tropical Storm**
  A tropical cyclone in which the maximum sustained surface wind speed (using the U.S. one-minute average standard) ranges from 34 kt (39 mph,17.5 m/s) to 63 kt (73 mph, 32.5 m/s). The convection in tropical storms is usually more concentrated near the center with outer rainfall organizing into distinct bands.
- **Hurricane**
  When winds in a tropical cyclone equal or exceed 64 kt (74 mph, 33 m/s) it is called a hurricane (in the Atlantic and eastern and central Pacific Oceans). Hurricanes are further designated by categories on the Saffir-Simpson scale. Hurricanes in categories 3, 4, 5 are known as Major Hurricanes or Intense Hurricanes.

The wind speeds mentioned here are for those measured or estimated as the top speed sustained for one minute at 10 meters above the surface. Peak gusts would be on the order of 10-25 percent higher.

How are hurricanes ranked?
The United States uses the Saffir-Simpson hurricane intensity scale for the Atlantic and Northeast Pacific basins to give an estimate of the potential flooding and damage to property given a hurricane's estimated intensity:

Source: Wikipedia and NOAA Hurricane Research Division.

Saffir-Simpson Scale

Category	Maximum sustained wind speed mph	m/s	kts	Minimum central pressure mb	Storm surge ft	m
1	74-95	33-42	64-82	> 980	3-5	1.0-1.7
2	96-110	43-49	83-95	979-965	6-8	1.8-2.6
3	111-130	50-58	96-113	964-945	9-12	2.7-3.8
4	131-155	59-69	114-135	944-920	13-18	3.9-5.6
5	156+	70+	136+	< 920	19+	5.7+

2005 Tropical Storm and Hurricane Activity

Atlantic

Tropical Storm ARLENE
Tropical Storm BRET
Hurricane CINDY*
Hurricane DENNIS
Hurricane EMILY
Tropical Storm FRANKLIN
Tropical Storm GERT
Tropical Storm HARVEY
Hurricane IRENE
Tropical Storm JOSE
Hurricane KATRINA
Tropical Storm LEE
Hurricane MARIA
Hurricane NATE
Hurricane OPHELIA
Hurricane PHILIPPE
Hurricane RITA
Hurricane STAN
Tropical Storm TAMMY
Hurricane VINCE
Hurricane WILMA
Tropical Storm ALPHA
Hurricane BETA
Tropical Storm GAMMA
Tropical Storm DELTA
Hurricane EPSILON
Tropical Storm ZETA

Pacific

Hurricane ADRIAN
Tropical Storm BEATRIZ
Tropical Storm CALVIN
Tropical Storm DORA
Tropical Storm EUGENE
Hurricane FERNANDA
Tropical Storm GREG
Hurricane HILARY
Tropical Storm IRWIN
Hurricane JOVA
Hurricane KENNETH
Tropical Storm LIDIA
Hurricane MAX
Tropical Storm NORMA
Hurricane OTIS

**Cindy was redesignated as a hurricane in the post-storm analysis.*

2006 Tropical Storm and Hurricane Activity

Atlantic

Tropical Storm ALBERTO
Tropical Storm BERYL
Tropical Storm CHRIS
Tropical Storm DEBBY
Hurricane ERNESTO
Hurricane FLORENCE
Hurricane GORDON

Pacific

Tropical Storm ALETTA
Hurricane BUD
Hurricane CARLOTTA
Hurricane DANIEL
Tropical Storm EMILIA
Tropical Storm FABIO
Tropical Storm GILMA
Hurricane HECTOR
Hurricane ILEANA
Hurricane JOHN
Hurricane KRISTY

As of Wednesday, Sept. 13, 2006. Courtesy of National Oceanic and Atmospheric Administration/National Weather Service National Hurricane Center

IN PROFILE

Livermore scientists benefit from SciDAC funding awards

More than 40 Laboratory researchers working on 14 multi-institutional scientific computing projects will benefit from $60 million in funding awarded by the DOE's Office of Science.

DOE's Scientific Discovery Through Advanced Computing program, or SciDAC, announced last week the selection of 30 computational science projects for funding over the next three to five years. The $60 million for fiscal year 2007 will be divided among Science Applications, Centers for Enabling Technology, Institutes and other computing infrastructure projects.

The goal of SciDAC is to advance the state-of-the-art in scientific simulation in DOE-relevant mission areas by creating multi-disciplinary teams comprised of mathematicians, computer scientists and applied science experts from national labs and research universities. SciDAC has been expanded to include the development of new data management and knowledge discovery tools for large data sets resulting from both experiments and simulation. The program is being called "SciDAC-2" to reflect its expanded scope. Initiated in 2001, SciDAC has already resulted in significant new advances in astrophysics, particle accelerator design, climate, combustion, fusion and other fields.

"By tapping a broad range of expertise from top research institutions, SciDAC is helping to accelerate the state-of-the-art in high-performance computing for the benefit of basic science as well as national and homeland security," said Dona Crawford, associate director for Computation at LLNL. "The large number of Livermore researchers participating in SciDAC projects this year reflects the leadership role the Laboratory plays in advancing scientific simulation."

Livermore will participate in 14 projects, including seven Centers for Enabling Technology (CETs), one institute, and six scientific applications. Two of the centers are led by LLNL researchers. CET project areas include visualization, scalable data management, interoperable meshing/geometry tools, scalable linear and nonlinear solvers, structured AMR algorithms, component technologies, and the earth system grid. The institute project is focused on performance engineering research. The biggest area of expansion for LLNL researchers is in the area of scientific application partnerships.

The CET projects led by LLNL include:

• Lori Diachin is the principal investigator leading the "Center for Interoperable Technologies for Advanced Petascale Simulations," an Applied Mathematics CET, to be funded at $2.5 million per year over five years. Participating institutions include Brookhaven, Oak Ridge, Pacific Northwest and Sandia national laboratories, and the Rensselaer Polytechnic Institute and State University of New York at Stony Brook. Diachin's Lab co-investigators are Bill Henshaw, Mark Miller and Craig Kapfer.

SciDAC applications have a demonstrated need for advanced software tools to manage the complexities associated with sophisticated geometry, mesh, and field manipulation tasks, particularly as computer architectures move toward the petascale. The Center for Interoperable Technologies for Advanced Petascale Simulations (ITAPS) will deliver interoperable and interchangeable mesh, geometry, and field manipulation services that are of direct use to SciDAC applications with minimal intrusion into application codes.

• Dean Williams is the principal investigator leading the project, "Scaling the Earth System Grid to Petascale Data Center for Enabling Technologies," in the Distributed Computing CET to be funded by $2.75 million per year over five years. Partners include Argonne, Lawrence Berkeley, Los Alamos and Oak Ridge national laboratories, and the National Center for Atmospheric Research, National Oceanic and Atmospheric Administration and the University of Southern California. Williams' Lab co-investigators are Robert Drach and Kyle Halliday.

Current efforts in climate modeling and climate science are generating massive amounts of data that are distributed across the globe. Under SciDAC-1, the Earth System Grid (ESG) was developed and deployed to make climate simulation data easily accessible to the climate modeling community. The Earth System Grid (ESG) currently has 2,300 registered users and manages 140 terabytes of data. It is estimated that more than 200 scientific publications are under way from analysis of ESG-delivered data in the past year alone. Despite these successes, ESG faces significant challenges in coming years as the size, complexity and the number of climate data sets grow dramatically. The goals of this proposed five-year project are to: sustain the successful existing ESG system; address projected scientific needs for data management and analysis; extend ESG to support the major Intergovernmental Panel on Climate Change assessment in 2010; support the Climate Science Computational End Station at the DOE Leadership Computing Facility at ORNL; and support climate model evaluation activities under the proposed SciDAC-2 climate application.

An additional 40 or so Lab researchers will participate as co-investigators in SciDAC science applications, CETs or Institute projects. Science application projects range from astrophysics, fusion science and climate modeling and simulation, to simulations of stress corrosion cracking and turbulent flows. For details about Applied Science, Institute and CET projects not mentioned above, see the DOE press release and SciDAC fact sheets posted at www.scidac.gov.

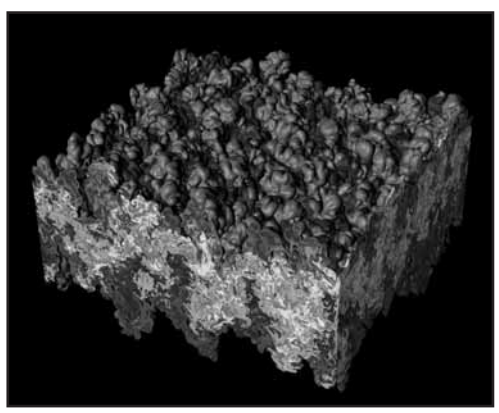
AX Division turbulence research makes the cover of *Nature Physics*

Lab researchers have discovered a turbulence Reynolds number effect that could accelerate flames in type 1a supernovae at rates exceeding those predicted by standard numerical simulations. The effect derives from the turbulence energy budget associated with Rayleigh-Taylor-unstable flame fronts.

Spontaneous mixing of fluids at unstable interfaces occurs in a wide variety of atmospheric, oceanic, geophysical and astrophysical flows. Rayleigh-Taylor instability occurs any time a light fluid pushes on a heavy fluid. Such is the case with the Crab Nebula, where hot gasses expanding from a supernova remnant are impacting denser material in the interstellar medium. Rayleigh-Taylor instability, a process by which fluids seek to reduce their combined potential energy, also plays a key role in all known types of fusion.

Using the Laboratory's BlueGene/L supercomputer, Andrew Cook and Bill Cabot of the Lab's AX Division achieved a Reynolds number of 32,000 in a direct numerical simulation of Rayleigh-Taylor flow. The simulation is the first to reach past the mixing transition (Reynolds number =10,000), while fully resolving all hydrodynamic scales of motion.

The research has important implications for supernovae as well as other extremely high Reynolds-number applications. The study appears on the cover of the August edition of *Nature Physics*.



Simulation of Rayleigh-Taylor flow.

RETIREES' corner

Garith (Mechanical Engineering, 2002) and **Amy** (Laboratory Services, 2002) **Helm** took a 15-day Mediterranean cruise in July. Their adventure began in Istanbul with stops in southern Turkey, the Greek Islands, Athens, the Amalfi coast, Sicily, Dubrovnik and finally, sailing into Venice. 12 ports in 5 countries. While every port was unique and wonderful, their favorites were Istanbul; the island of Santorini; Amalfi/Positano; and Venice. They said the entire trip should be in "1,000 Places to See Before You Die" (and most of the ports are).

Carol and Art (Electronics Engineering, 1993) **Krakowsky** took two granddaughters, Megan and Wendy, on an Elder Hostel program in France, which focused on French cooking, language, and history. Group members did food preparation, cooking and served lunches six days under the supervision of an experienced chef, baking their own bread, and making cheese. They also visited medieval castles and towns, two wine regions and the highest sand dune in Europe. The return flight was on Aug. 11, one day after the terrorist arrests in the UK, and Charles De Gaulle airport in Paris was a mess. The flight was delayed four hours and all liquids, tooth paste, chap stick, were confiscated. (See full unedited version on the Web retiree page).

On July 17, the second mini-reunion of Pioneer, Calif. area retirees and their friends was held at **Cleve** (Mechanical Engineering, 1993) and **Betty Gunderson's** lovely home on the Mace Meadows golf course. Other attendees were: **Dan** (Electronics Engineering, 1996) and **Kay Placido, Pat** (G Division, 1990) and **Jane Ellis,** (Engineering, 1993) **Don** (Mechanical Engineering, 1987) and **Audrey Emig,** (Director's Office, 1986) **Steve Kahn** (Mechanical Engineering, 2002) and his wife, **Darlene Santos, Ron** (Mechanical Engineering, 1993) and **Donna Carr, Gus** (Engineering, 1993) and **Jane** (Mechanical Engineering, 1993) **Olson, and Ron** (Mechanical Engineering, 1990) and **Barbara** (Mechanical Engineering, 1993) **Hill.**

The September retiree luncheon will be at noon on Wednesday, Sept. 20, at the Elks Lodge in Livermore, 940 Larkspur Drive. (Reservations: www.llnlretirees.org). In keeping with this time of year, our own Alan Mode will speak on: "Dyslexia — It's more that b-d confusion" — What dyslexia is and isn't, modern views on the condition and methods to cope with condition, and some local programs to help students with dyslexia learn to read.

Send any input to Jane or Gus Olson. E-Mail: AugustO@aol.com or JaneRubert@aol.com. Phone: (925) 443-4349, address: 493 Joyce Street, Livermore, CA 94550.

NEWSLINE

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IN MEMORIAM

Lavern Johnson

Lavern Arvid Arnon Johnson of Vacaville died Aug. 16. He was 85.

Born in Funk, Neb., on April 13, 1921, Johnson lived in Vacaville the past four years and previously resided in Modesto and Tracy. He retired from the Lab in 1986.

He enjoyed golfing and bowling, and was a member of SonRise Community Fellowship Church of the Nazarene.

Johnson is survived by his children, Larry Johnson, and his wife, Sharon, of Arcadia; Allen Johnson, and his wife, Charlotte, of Williams; Gene Johnson, and his wife, Pamela, of Vacaville; Ardelle Johnson, and his wife, Angie, of Roswell, N.M.; 13 grandchildren; and many great-grandchildren.

He was preceded in death in March by his wife of 64 years, Marie; and siblings, Milton, Harold, Bud, Walter, Irene and Mona.

Services were held in Vacaville. Contributions may be made in his name to SonRise Community Fellowship Seniors Ministry, 620 Orange Drive, Vacaville, CA. 95687.

Jerry Auerbach

Jerry Auerbach, a veteran of LLNL laser programs, died on Sept. 5 of complications associated with the stroke he suffered a year ago.

Auerbach earned a B.S. from Brown University in 1967 and an M.S. from Cal Tech in 1968. He then served as an officer in the nuclear navy for four years, returned to Cal Tech, and earned his Ph.D. in 1975. During this time he also worked in the fast breeder reactor program at Argonne National Lab. He came to the Laser Program at LLNL in 1975.

His early work on Janus, Shiva, and Nova included laser plasma interactions studies, and laser and target diagnostics analysis and reporting. His area of greatest expertise was in frequency conversion modeling, which proved key to the success of Beamlet, and now NIF. He was the primary author of a number of frequency conversion codes, which were critical in the design of the NIF converter. The most detailed of these codes is now part of the NIF control system software, and is used for setting up shots on the laser. His body of work on frequency conversion modeling has been an important contribution to this program, and that expertise will be missed.

In addition, Jerry will be personally missed for his calming presence in a high-stress project, his ready willingness to help others, his professional and personal integrity, and his team work ethic.

His family plans a local memorial service in the near future and details will follow as they become available. In lieu of flowers, funds are being collected in trust for his surviving 16 year old twin boys. For cards and contributions, see Terrie Valin, 4-5657, Bldg. 482, room 2234A.

Richard J. Borg

Richard (Dick) Borg died Jan. 4 in Santa Rosa following a stroke. He was 81.

He was born in Hollywood, Calif. in 1925 and raised in Southern California. After serving three years in the U.S. Air Force during World War II, he obtained a bachelor's of science and a master's of science degree in chemistry at UC Berkeley.

Borg was one of the first employees hired at LLNL in October 1952. He left the Lab to attend Princeton University where he received his doctorate degree in 1957 and where he was an instructor in metallurgy in 1958 and 1959. He returned to Livermore and led a group that focused on solid state kinetics and materials science.

He joined the UC Davis Department of Applied Science at Livermore in 1963 where he was a professor and acting chairman. He resigned in 1976 to become division leader of the Nuclear Chemistry Division at the Lab.

He returned to research at the time of his partial retirement in 1986. He authored many technical papers, patents and two books. He was founder and editor-in-chief of the journal "Extractive and Process Metallurgy." He was a fellow of the American Physical Society and the recipient of many honors, including an appointment to the post of visiting distinguished professor at the American University of Cairo, Egypt in 1972.

At retirement, he moved to Sea Ranch with his family in 1990. Borg was an avid backpacker, tennis player and fisherman.

He is survived by his wife of 55 years, Iris Borg; son Lars Borg and daughter-in-law Jennifer Borg of Albuquerque; two grandchildren; and many nieces and nephews.

Remembrances may be made in his name to the UC Foundation, 2550 Bancroft Way, Berkeley, CA 94720-4200.

BOB HIRSCHFELD/NEWSLINE

Sept. 11 tribute

A solemn flag ceremony at the Lab's Superblock on Monday honored the victims, including police and firefighters who died during the terrorist attacks of Sept. 11, 2001. LLNL firefighters (including pictured from left: Ken Rinna, Rick Menise, and Capt. Sean Sinclair), used an aerial ladder truck to lower an American flag from its place of honor above the Bldg. 334 entrance portal, and replace it with a new flag. The LLNL Protective Force Division honor guard fired a 21-gun salute, as about 100 spectators observed a moment of silence. The annual memorial evolved from an individual show of patriotism shortly after the four hijacked planes crashed on 9/11, when a Superblock worker brought in a flag and attached it to the fence. Since then, on each anniversary, the flag is ceremonially replaced.

HOME highlights
Camp Arroyo events

September's "At HOME in Our Community" activities sponsored by the 2006 HOME Campaign will focus on Camp Arroyo in Livermore. The 138-acre park has been owned and maintained by the East Bay Regional Park District since 1995 and offers local students an ideal setting for nature exploration and environmental education.

Take a tour of Camp Arroyo-open to all Lab employees

Wednesday, Sept. 20 and Thursday, Sept. 21
11:45 a.m.-1 p.m. each day
Camp Arroyo, 5535 Arroyo Road, Livermore

There will be a one-half hour tour with a guide and camp naturalist. Highlights include: historical heritage; "straw-bale" dining hall-one of the biggest facilities in California; organic gardens; solar-powered cabins; and many more "Green-Up" conservation advances. Space is limited. To sign up, send an e-mail to either Amy at Camp Arroyo (amy@ttff.org) or Germaine Clark (clark75@llnl.gov).

DNA hands-on project

Wednesday, Sept. 27
9-11:30 a.m. at Camp Arroyo

Cindy Thomas, Chitra Manohar and John Hinz will provide three one-half hour, hands-on activities highlighting genomic DNA extraction with students to encourage and promote science.

For more information about Camp Arroyo, go to the Web at http://www.ebparks.org/camp_arroyo/arroyo_main.htm

For more information about the 2006 HOME Campaign, go to the Web at http://home.llnl.gov/

Valley Fever cases on the rise this year in the Tri-Valley

In recent months three Laboratory employees have been diagnosed with Valley Fever, which is also known as *Coccidioidomycosis*. It is a fungal disease caused by a microorganism that lives in the soil from the San Joaquin Valley down into the Sonora Desert.

While most people who become infected have no symptoms, about 40 percent develop a flu-like illness. Some develop a severe pneumonia and a minority develops other complications as the fungus spreads to other parts of the body.

"Valley Fever has been on the rise this year," said Dr. Jim Seward, LLNL medical director. "There have been over 1,550 reported cases to date this year from California while the average to date for the past three years is only 930 cases." Seward attributes the increase to the late, copious rains that may have increased the number of *Coccidioidomycosis* spores in the soil.

The concern for Valley Fever primarily affects those who work at or visit Site 300, particularly if they are involved in outdoor activities with potential exposure to dust. Health Services and ES&H team members are now working with Site 300 management to increase awareness of the risk and to better protect workers involved in dust generating activities.

While the risk may be increased this year, notices about Valley Fever have been posted at Site 300 for many years. In addition, Section 10.2.3 of the ES&H Manual and its Appendix B provide information on the Laboratory's guidance to employees working at Site 300.

Residents of the Central Valley may also be at increased risk for Valley Fever this year. Seward advises deferring dust generating activities whenever possible and using wet soil techniques for necessary work. Proper respiratory protection, such as filtering face pieces, may also reduce the risk of exposure.

The skin test that screens for past exposure or immunity to the disease has been unavailable for several years. However, a replacement test is currently being reviewed by the Food and Drug Administration. Dark-skinned individuals, Filipino-Americans and others of Asian descent, women in the last trimester of pregnancy, diabetics, and immuno-suppressed individuals all have increased risk of serious illness.

For questions about Valley Fever, contact Seward in Health Services at 3-6903.

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